



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,046	12/21/2000	Hiroshi Oohigashi	0229-0631P	5516

7590

10/01/2003

BIRCH, STEWART, KOLASCH & BIRCH, LLP  
P.O. Box 747  
Falls Church, VA 22040-0747

EXAMINER

MAKI, STEVEN D

ART UNIT

PAPER NUMBER

1733

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/741,046

Applicant(s)

OOHIGASHI, HIROSHI

Examiner

Steven D. Maki

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,4 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 6-11 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 04 November 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1733

1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8-25-03 has been entered.

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 4, it is unclear what additional limitation is being claimed.

4) Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

The "limitation" in claim 4 is already required by claim 1.

5) Claim 13 is objected to because of the following informalities: In claim 13 line 2, "lines" should be --line--. Appropriate correction is required.

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 1733

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7) **Claims 1, 4, 6, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Europe '464 (EP 943464) in view of Japan '709 (JP 3-104709) and optionally Japan '202 (JP 2-212202) and/or Tsuda (US 4,962,801).**

Europe '464 substantially discloses the claimed tire. In particular, Europe '464 discloses a pneumatic tire having an asymmetric tread comprising blocks defined by:

**outside lateral grooves 3** inclined at 60-80 degrees (overlapping the claimed range of 40-60 degrees);

**inside lateral grooves 5** inclined at 80-110 degrees (substantially overlapping the claimed range of 70-100 degrees);

**outside connecting grooves 6** inclined at 15-45 degrees (substantially overlapping the claimed range of 20-50 degrees);

**inside connecting groove 7** inclined at an angle more than 0 degrees such as 10 degrees (directly corresponding to the claimed range of more than 0 degrees).

See figure 3.

With respect to angles  $\theta 1$ ,  $\theta 2$ ,  $\theta 3$ ,  $\theta 4$  and  $\theta 6$  for the connecting grooves gradually decreasing from the outside tread edge to the inside tread edge, Europe '464 teaches decreasing the angles from angle  $\theta 4$  for the outside connecting groove to angle  $\theta 6$  for the inside connecting groove. See for example figure 1 which shows the inclination angle for connecting groove 7 as being smaller than the inclination angle of an adjacent outside connecting groove 6. Although Europe '464 teaches using different angles for

Art Unit: 1733

an inside connecting groove and an outside connecting groove, Europe '464 does not teach using different angles for all the connecting grooves.

As to claims 1, 4 and 8, it would have been obvious to one of ordinary skill in the art to use different angles for **outside connecting grooves** of the *asymmetrical tread pattern* of Europe '464's *off road* tire such that:

- the angles  $\theta_1$ ,  $\theta_2$ ,  $\theta_3$ ,  $\theta_4$  for the outside connecting grooves and angle  $\theta_6$  for the inside connecting groove gradually decrease from the outside tread edge to the inside tread edge; and
- the angle differences  $\theta_1-\theta_2$ ,  $\theta_2-\theta_3$  and  $\theta_3-\theta_4$  are not less than 5 degrees

since (a) Japan '709 suggests gradually decreasing the inclination angle of connecting grooves from an outside tread edge to an inside tread edge of an *asymmetrical tread pattern* of a tire for *off-road use* and optionally (b) Japan '202 and/or Tsuda further evidence the desirability of gradually decreasing the inclination angle of connecting grooves from a tread edge toward the other edge. With respect the optional references: Japan '202 specifically teaches gradually decreasing the outside connecting grooves of an asymmetric tread. Tsuda suggests using different inclination angles for auxiliary slant grooves (connecting grooves) so as to improve cornering stability and noise reduction on off road or snow conditions.

As to the angles  $\theta_1$ ,  $\theta_2$ ,  $\theta_3$ ,  $\theta_4$  being 20-50 degrees for the **connecting grooves**, Europe '464 suggests this subject matter since Europe '464 teaches inclining the connecting grooves at an angle of 15-45 degrees. Europe '464's range of 15-45 degrees substantially overlaps the claimed range of 20-50 degrees.

Art Unit: 1733

As to angle  $\theta_0$  being 40-60 degrees for the **outside lateral grooves**, Europe '464 suggests using an angle of  $\theta_0$  of 60 degrees (which falls within the claimed range of 40-60 degrees) for the outside lateral grooves. Europe '464's range of 60-80 degrees for angle  $\theta_0$  overlaps the claimed range of 40-60 degrees (an angle of 60 degrees falls within Europe '464's range of 60-80 degrees and the claimed range of 40-60 degrees). In any event: it would have been obvious to incline the outside lateral grooves of Europe '464's asymmetric tread for off road at an angle within the claimed range of 40-60 degrees since (a) Japan '202 shows inclining outside lateral grooves at a relatively small angle with respect to the EP so that the outside lateral grooves are more steeply inclined or (b) Tsuda suggests inclining main slant grooves at an angle  $\theta_a$  of 30-75 degrees when using the differently inclined auxiliary slant grooves in consideration of the problem of embedding the groove with mud in use off road. It is acknowledged that the grooves in Japan '202 and Tsuda are curved. However, claims 1 and 8 fail to exclude curved grooves and Europe '464 teaches using straight or curved outside lateral grooves. See page 3 lines 49-50.

As to the angle  $\theta_5$  being 70-100 degrees for the **inside lateral grooves**, Europe '464 suggests this subject matter since Europe '464 teaches inclining inside lateral grooves at an angle  $\beta$  of 80-110 degrees. Hence, Europe '464 provides ample suggestion to incline the inside lateral grooves at an angle (e.g. 80-100 degrees) within the claimed range of 70-100 degrees.

As to claims 6 and 7, the claimed angle of substantially 90 degrees (claim 6) and more than 90 degrees but not more than 100 degrees (claim 7) for the inside lateral

Art Unit: 1733

grooves is suggested by Europe '464 which teaches using an angle of 80-110 degrees; it being noted that in example 1 the angle for the inside lateral grooves is 90 degrees.

As to claim 8, Europe '464 mounts the tires on a four wheeled vehicle. See figure 1 of Europe '464.

As to claim 11, Europe '464 teaches that the outside lateral grooves may be straight, zigzag or curved. See page 3 lines 49-50. Hence, Europe '464 expressly teaches the use of straight outside lateral grooves.

**8) Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Europe '464 (EP 943464) in view of Japan '709 (JP 3-104709) and optionally Japan '202 (JP 2-212202) and/or Tsuda (US 4,962,801) as applied above and further in view of German'829 (DE 3815829).**

As to claims 9 and 10, it would have been an obvious alternative to mount Europe '464's tires such that the inclined outside lateral grooves are inclined in the same direction since German '829 teaches mounting tires having an asymmetric tread such that the lateral grooves are inclined in the same direction (figure 10) or the opposite direction (e.g. figure 9).

#### **Allowable Subject Matter**

**9) Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

Art Unit: 1733

## Remarks

10) Applicant's arguments with respect to claims 1, 4, 6, 7, 11-12 have been considered but are moot in view of the new ground(s) of rejection.

Applicant comments and the examiner agrees that the examiner relies on Europe '464, which is the earlier work of the present inventor, to show the basic tire tread arrangement. The examiner adds that Europe '464 is available as prior art under 35 USC 102(b).

Applicant argues that Europe '464 does not show that the inclination angles of  $\theta_1$  -  $\theta_4$  for the connecting grooves are different. More properly, Europe '464, like applicant, teaches arranging connecting grooves in an asymmetric tread and suggests inclining a **connecting groove** at the inside of the tread at an angle that is different from the angle of a **connecting groove** at the outside of the tread. In particular, Europe '464 teaches inclining an outside connecting groove at an angle of 15-45 degrees and inclining an inside connecting groove at an angle such as 10 degrees. The description of the angles  $\theta_1$ ,  $\theta_2$ ,  $\theta_3$ ,  $\theta_4$  and  $\theta_6$  gradually decreasing from the outside tread edge to the inside tread edge requires angle  $\theta_6 < \theta_1$ . Europe '464 expressly discloses the subject matter of  $\theta_6 < \theta_1$  by teaching an angle  $\delta$  for example of 10 degrees and a different angle  $\gamma$  of for example 45 degrees. Furthermore, newly cited Japan '709 and previously cited Tsuda teach inclining connecting grooves differently. Applicant acknowledges that Tsuda teaches connecting grooves inclined at different angles. See page 12 lines 17-18 of response filed 7-15-03. Tsuda, which like Europe '464 discloses an asymmetric tread for off road use, motivates one of ordinary skill in



Art Unit: 1733

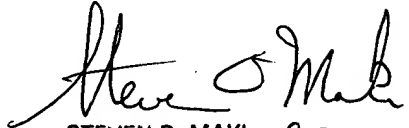
the art to incline connecting grooves differently to improve cornering stability and noise reduction for off road or snow conditions. The use of differently inclined connecting grooves is consistent with Europe '464's teaching to incline an outside connecting groove at an angle of 15-45 degrees which is different than an angle of inclination such as 10 degrees for an inside connecting groove.

11) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is 703-308-2068. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven D. Maki  
September 22, 2003

  
STEVEN D. MAKI 9-22-03  
PRIMARY EXAMINER  
GROUP 1300  
40 1733